Oxytocin Massage Can Increase Breastfeeding Production in Postpartum Mothers

Epti Yorita[1], Sri Yanniarti[1], Istiarika[1]
[1]Program Studi Sarjana Terapan Kebidanan PoltekkesKemenkes Bengkulu

Email corespondensi : eptiyorita74@gmaiil.com

Track Record Article

Accepted: 29 March 2023
Revised: 31 May 2023
Published: 22 June 2023

How to cite:

Yorita, E., Yanniarti, S., & Istiarika. (2023). Oxytocin Massage Can Increase Breastfeeding Production in Postpartum Mothers. *Contagion : Scientific Periodical of Public Health and Coastal Health*, 5(2), 673–682.

Abstract

Breastfeeding is the most appropriate feeding method for babies, so the government issued a policy of implementing 10 steps to successful breastfeeding to support successful breastfeeding. However, the coverage of exclusive breastfeeding is still low. Pre-lacteal feeding, culture, and common knowledge are the causes of the failure of exclusive breastfeeding. In addition, the mother's perception of insufficient milk supply is the most common reason for stopping breastfeeding. Therefore, an oxytocin massage intervention is needed to increase milk production. This study aims to determine the effect of oxytocin massage on breastfeeding production in postpartum mothers in the work area of the Bengkulu City Health Center. Quasi-experimental research design with control group post-test only. The treatment group was postpartum women who were given oxytocin massage, while the control group was given endorphin massage. A sample of 34 people was taken by purposive sampling technique. Data was collected through questionnaires and observation sheets. A breast pump measures breastfeeding production. Data collection was carried out from January to April 2022. Data were analyzed univariately, bivariate with independent t-test, and multivariate with anova. The results showed that there was an effect of oxytocin massage on milk production p=0.00. The mean difference was 1.54. There is an effect of Early Breastfeeding Initiation (EIB) status on breast milk production p=0.00, and there is an effect of frequency of breastfeeding on milk production p=0.00. Oxytocin massage is not the most dominant variable affecting breastfeeding production. It is recommended that health service providers provide breastfeeding education continuously during pregnancy, perinatal, and until the baby is two years old by involving the family and using digital information technology that can reach all targets.

Keywords: Breastfeeding Production, Oxytocin massage

INTRODUCTION

Breastfeeding is the most appropriate feeding method for babies. Exclusive breastfeeding, starting within the first hour of birth to six months, continued for up to two years, can prevent the death of 820,000 children under the age of five years and 87% of babies under the age of six months. It can protect children from chronic diseases, encourage growth and development and increase intelligence. Breastfeeding is one of the most effective ways to protect mothers from bleeding, postpartum depression, ovarian and breast cancer, heart disease, and type 2 diabetes (Soares, 2021; Al Sabati, 2019; UNICEF & WHO, 2019).

Moreover, child health because it can encourage healthy and optimal growth and development from early childhood. Globally, breastfeeding rates are still meager. 2013–2018, only 43% of newborns started breastfeeding within one hour of birth, and only 41% of babies were exclusively breastfed. Research in India found that only 29.7% of infants initiated early breastfeeding, 40.5% of infants were given food other than breast milk, 71.9% were given

formula as the primary food, and only 41.1% were given complementary foods at the recommended age of six months (UNICEF & WHO, 2019; Mehlawat, 2020).

However, Data shows that only 52.5% of babies in Indonesia get exclusive breastfeeding in Bengkulu Province, 57.6% in Bengkulu City 66.4%, and the working area of Penurunan Health Center 54.7% (Kemenkes RI, 2021; BPS, 2021). Hence, the Government issued a policy of Implementing 10 Steps to Successful Breastfeeding (LMKM) to support the success of exclusive breastfeeding.

Factors contributing to the failure of exclusive breastfeeding are perceptions of little milk production, norms, cultural beliefs, or family influence (Suryani, 2017). Knowledge, Early Breastfeeding Initiation (EIB), attitudes, misconceptions, family support, and health workers influence breastfeeding, so efforts are needed to increase knowledge about lactation management and the benefits and impacts of not breastfeeding (Rapingah, 2021; Suryani, 2017). The practice of pre-lacteal feeding still occurs in various countries, including Indonesia. It is believed to be a norm, belief, culture, family influence, or breast milk that has not come out, not based on health or nutritional problems (Chea & Asefa, 2018; Sorrie, 2020). Wrong perceptions about breastfeeding cause stress for postpartum mothers, so it inhibits the production of the hormones prolactin and oxytocin, thereby reducing milk production (Rahayu, 2020).

Mothers' perception of insufficient milk supply is the most common reason for stopping breastfeeding. Besides that, stress or pain due to the delivery process reduces the breastfeeding supply, so pharmacological therapy is used to overcome this. However, it causes side effects for the mother and baby (McGuire, 2018). Which plays a role in breast milk production (Erickson et al., 2020). This study aims to see the effect of oxytocin massage on milk production in postpartum mothers in the Penurunan Health Center work area in Bengkulu City and identify the influence of other factors, namely EIB and frequency towards breastfeeding production.

METHODS

The research used a quasi-experimental design with a control group post-test only. The treatment group was postpartum women who were given oxytocin massage from day one to day five once a day in the morning, lasting 10-15 minutes. The intervention in the control group was given endorphin massage for the same duration. The independent variables are oxytocin massage, the dependent variable is milk production, as well as the external variables of EIB and the frequency of breastfeeding. The research sample for postpartum mothers on the

first day in the working area of the Penurunan Health Center in Bengkulu City was 34 people divided into two groups using a purposive sampling technique. Inclusion criteria for normal postpartum women, no breast or nipple problems, willing to be respondents. Exclusion criteria were babies with congenital abnormalities and very low birth weight. Data collection was carried out from January to April 2022.

Then, the data collection used questionnaires and observation sheets to see breastfeeding production, measured daily using a breast pump. Researchers compiled the oxytocin massage method based on sources (Lubis & Angraeni, 2021). Data were analyzed univariately with the frequency distribution table, bivariate with the independent t-test, and multivariate with the Ancova test with 95% CI using SPSS version 20 software. The research received an ethically proper letter from the ethical commission of Poltekkes Kemenkes Bengkulu with the number KEPK.M/031/01/2022.

RESULTS

Table.1 The Effect of Oxytocin Massage on Breast Milk Production in Postpartum Mothers

Variable	n=34	Min	Max	SD	Mean	Mean Difference	P
Breastfeeding Production							
-Oxytocin Massage	17	4	8	1,210	6,26	1.54	0.00
-Endorphin Massage	17	3	6	0,930	4,72		

*Independent Sample T-Test

Table 1. while in the endorphin massage group, it was 4.72 ml, SD 0.930. The statistical test results showed an effect of oxytocin massage on breastfeeding production in postpartum mothers with a p=0.00. The mean difference was 1.54 means oxytocin massage could increase milk production by 1.54 ml compared to endorphin massage.

Table 2. Frequency Distribution of EIB Status and Breastfeeding Frequency in Postpartum Mothers

Variable	Oxytocin Massage n=17		Endorphin Massage n=17	
	f	%	F	%
EIB Status				
Yes	15	88,2	14	82,4
No	2	11,8	3	17,6
Breastfeeding Frequency				
Frequently	17	100	12	70.6
Infrequently	0	0	5	29.4

Based on Table 2.1, it can be seen that in the oxytocin massage group, 88.2% of postpartum women did EIB. While in the endorphin massage group, 82.4%. All mothers in the oxytocin massage group frequently breastfed, whereas in the endorphins group only 70.6%.

Table 3. The Effect of EIB Status and Breastfeeding Frequency on Breast Milk Production in Postpartum Mothers

Variable	n=34	Min	Max	SD	Mean	Mean Difference	P
EIB Status							
Yes	29	1	2	1.246	5.73	1.65	0.00
No	5	1	2	0.769	4.08		
Breastfeeding Frequency							
Frequently	29	1	2	1.126	5.81	2.21	0.000
Infrequently	5	1	2	0.510	3.60		

Table 3 shows that the of the 29 postpartum mothers who did EIB had a mean milk production of 5.73, with an SD of 1.24, while those who did not do EIB had an average milk production of less, namely 4.08. Statistical test results showed an effect of EIB status on milk production with a p = 0.00, mean difference 1.65. The table above also shows that 9 postpartum mothers who breastfed their babies frequently had a mean milk production of 5.81, with an SD of 1.24, while the average milk production of mothers who rarely breastfed their babies was 3.60. The statistical test results showed an effect of breastfeeding frequency on breastfeeding production with a value of p = 0.00, mean difference 2.21.

Table 4. Effect of Oxytocin Massage on Increasing Breastfeeding Production after Controlling for EIB Variables and Breastfeeding Frequency

Variable	Mean Square	F	Sig
EIB	107,163	5,162	,030
Breastfeeding Frequency	233,369	11,241	,002
Massage	171,554	8,264	,007

The results of the multivariate analysis in table 4 show that oxytocin massage, EIB status, and breastfeeding frequency significantly affect breastfeeding production. It means that no variable most dominantly influences breastfeeding production in postpartum mothers.

DISCUSSION

The results of this study indicated that the average breastfeeding production in the postpartum group who underwent oxytocin massage was higher than the endorphins massage group by 6.26, with a mean difference of 1.45. This study supports previous findings that there was an increase in the average breastfeeding production from 5.75 prior to 7.94, p = 0.00. It shows that oxytocin massage can increase the average breastfeeding production by 2.19 ml a day after being massaged for 10-15 minutes for three consecutive days (Magdalena, 2020). Oxytocin massage stimulates the production of prolactin and oxytocin on the first day of breastfeeding, affecting the production and smoothness of milk release (Yuviska et al., 2022).

This study's results align with Oktafirnanda (2019) that this oxytocin massage is done to stimulate the oxytocin reflex or the letdown reflex. Oxytocin massage also increases comfort for the mother, reduces breast engorgement, prevents milk retention and stimulates the release of the hormone oxytocin, and maintains breastfeeding production when the mother and baby are sick. Oxytocin is formed faster than prolactin, causing milk to be sucked by the baby, then this suction stimulates a cyclic increase in oxytocin and prolactin (Erickson et al., 2020).

In this study, the researchers conducted an oxytocin massage intervention in a sitting position. The head was placed on a table or the edge of the bed, folding the arms folded to support the head so that the mother was more comfortable. This condition makes mothers relax. Mothers are invited to think about positive things and reduce stress on postpartum mothers. This is in accordance with McGuire (2018), that breastfeeding is a natural process that benefits both mother and baby. Therefore emotional support and non-pharmacological therapy are more beneficial.

These findings support previous research on differences in breastfeeding production before and after oxytocin massage. Oxytocin massage effectively increases the average milk production on the first and second postpartum days by 1.84 ml. Oxytocin massage is carried out along the spine to the fifth-sixth costae, which are acupressure points that are connected to the nerves around the breast. Emphasis on this point reduces tension in the postpartum mother due to the baby's birth so that the mother can breastfeed comfortably (Farida et al., 2021).

Then, these findings support previous research that oxytocin massage performed for 30 minutes in the first three days postpartum can increase breastfeeding production and self-efficacy in nursing mothers. Oxytocin massage can reduce pain in nursing mothers and reduce emotional stress. Breastfeeding is related to psychological readiness. The release of the

hormone oxytocin increases the feeling of comfort, thereby increasing the confidence of breastfeeding mothers, which is expressed verbally. Oxytocin massage interventions can be carried out at home, regardless of health facilities, so families and husbands can carry out this intervention and support mothers during breastfeeding (Mustika Dewi et al., 2022). The same research was also conducted by Utami (2020) that oxytocin massage effectively increased the adequacy of breast milk production with a p-value = 0.02.

Previous findings also found that oxytocin massage can increase breast milk production with a p-value = 0.00. Oxytocin massage can improve breastfeeding release in postpartum mothers because of the comfort felt by the mother when the release of the hormone oxytocin, which is synonymous with the "hormone of affection," causes breast milk production to increase. Simultaneously with the formation of the hormone oxytocin, the anterior pituitary secretes the hormone prolactin to smooth the lactation process (Suciawati, 2017).

Moreover, this study also found that EIB status affected milk production. This is consistent with the finding that 34% of mothers started breastfeeding in the first hour of their baby's birth. Other findings show that 76.3% of mothers who do EIB have a lot and smooth production with a p = 0.00. Breast milk production is higher in mothers who make skin-to-skin contact earlier. This is an essential factor in determining breastfeeding efficacy because it increases the perception of the adequacy of breast milk production. Then, a high perception of breast milk production is positively related to the success of exclusive breastfeeding (Sandhi, 2020**;** Nugraha & Andini, 2022).

In this study, midwives who assisted deliveries performed EIB immediately after the baby was born so that the baby immediately learned to suckle from the mother. This early initial contact allows the baby to immediately recognize the smell and mother's nipples. This causes babies who do EIB to be smarter at sucking the mother's nipples, this will continue in the following hours. Immediate stimulation in the form of sucking the baby's mouth on the nipple causes the production of oxytocin thereby increasing milk production

This research is also in line with the findings of Setyowati (2018**)** that there is a relationship between EIB and milk production during the first six months of a baby's life. EIB, done in less than an hour, will help expedite the expulsion of breast milk more quickly. Therefore, counseling is needed about the strategy and importance of EIB as a first step to supporting the success of exclusive breastfeeding (Gedefaw et al., 2020).

Furthermore, this study found an effect of breastfeeding frequency on breast milk production. This aligns with previous findings that mothers who breastfeed their babies daily have higher milk production than mothers who breastfeed less. It is due to breastfeeding increasing the production of oxytocin marked by short-term fluctuations in endogenous oxytocin during breastfeeding. Breastfeeding can reduce psychological stress, and anxiety, increase positive feelings in babies, and increase happy facial expressions. then, fluctuations in endogenous oxytocin impact the bonding attachment between mother and baby and affect the emotional process of the mother's relationship with other adults (Matsunaga et al., 2020).The frequency of breastfeeding has a significant effect on milk production. The baby's suction on the nipples will stimulate the release of hormones responsible for lactation. Mothers who breastfeed their babies more often have smoother milk production (Yulianto et al., 2022).

Furthermore, this study found no dominant factor affecting milk production. Oxytocin massage, EIB, and breastfeeding frequency jointly contribute to milk production. Therefore breastfeeding education must be carried out thoroughly and continuously using various approaches during pregnancy, perinatal, and up to two years of age by involving the family and using digital information technology to reach targets with different economic, geographical, racial/ethnic conditions, then combines lactation management and need of breastfeeding mothers (Lewkowitz & Cahill, 2021**;** Sinaga & Gultom, 2023)**.**

CONCLUSIONS

There is an effect of oxytocin massage on milk production. There is an effect of EIB status and frequency of breastfeeding on breast milk production. Oxytocin massage is not the most dominant variable affecting milk production. Continuous breastfeeding education is needed from pregnancy until the baby is two years old by involving the family.

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